

FIG. 1

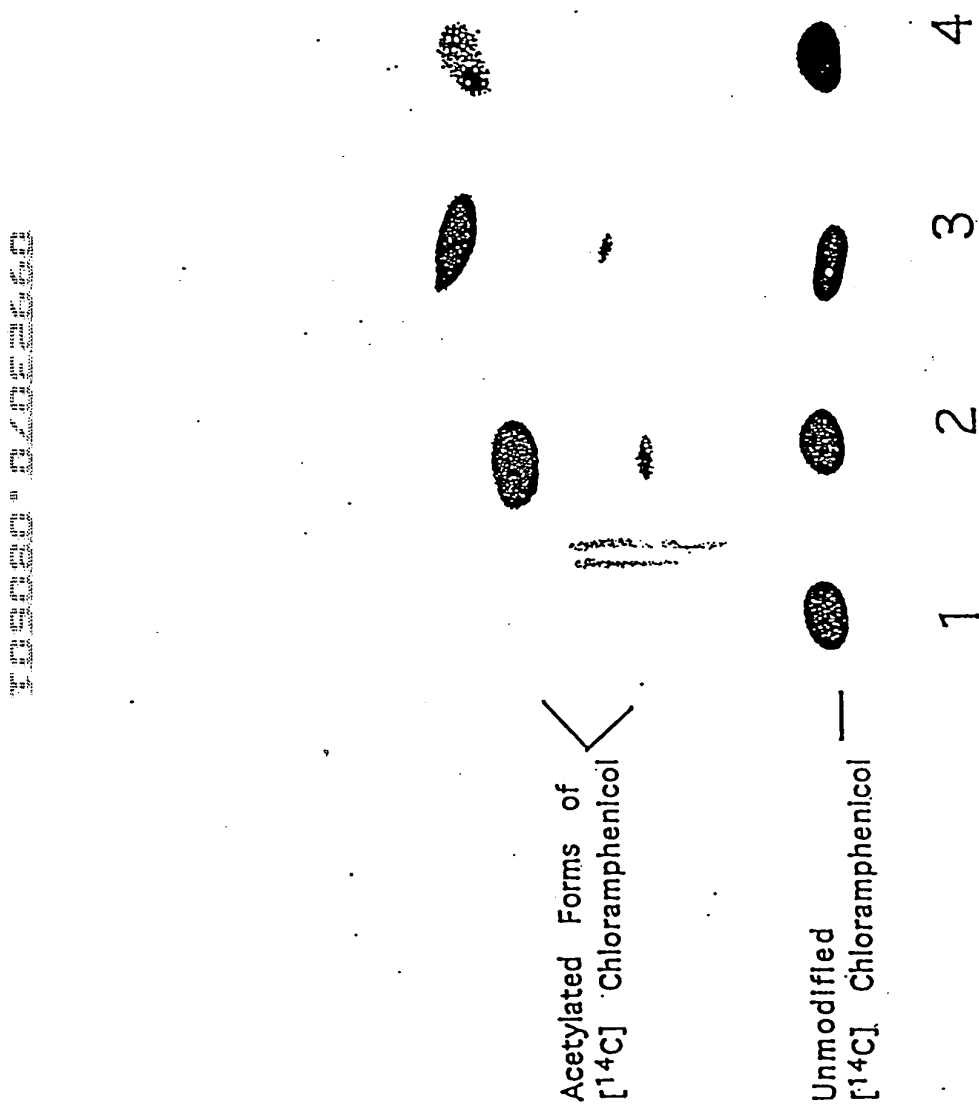


FIG. 2

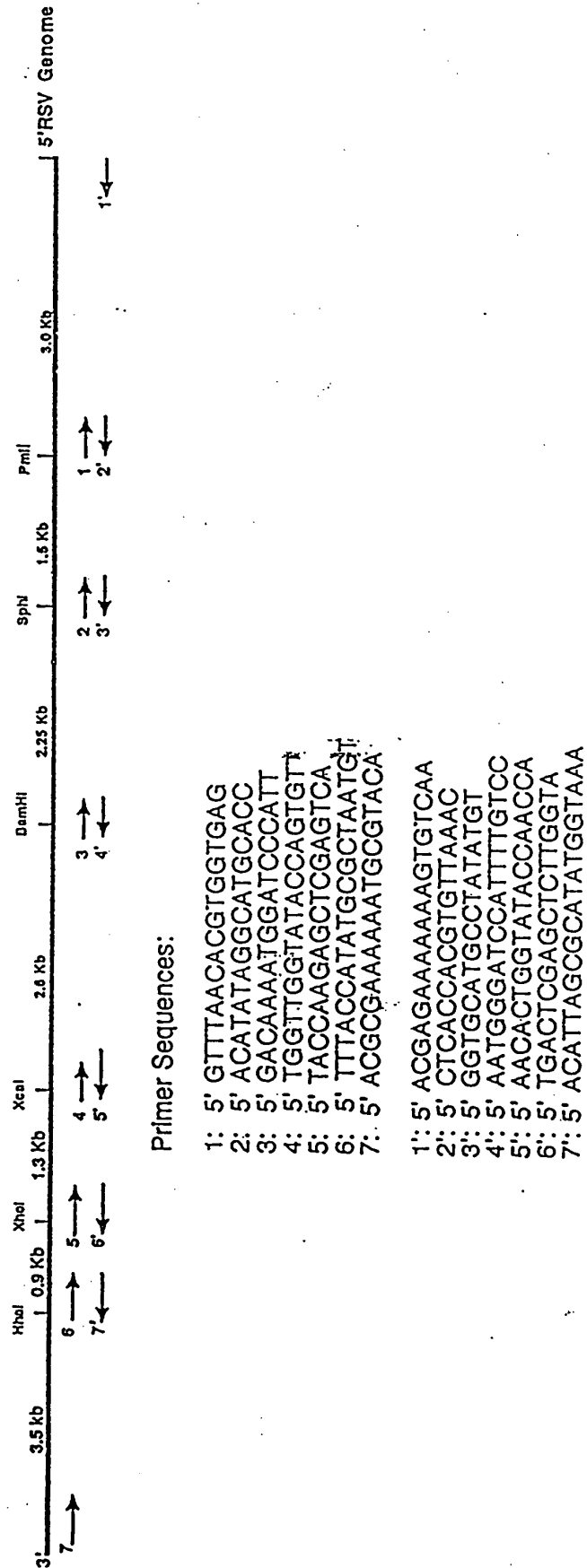
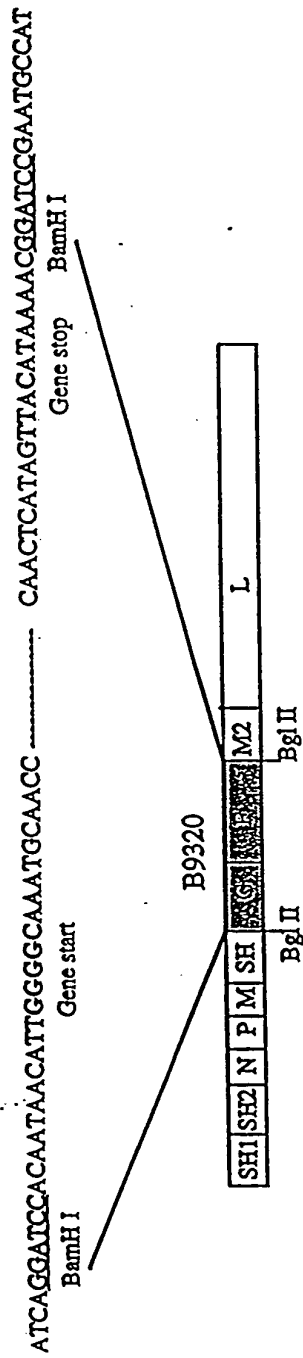


FIG. 3

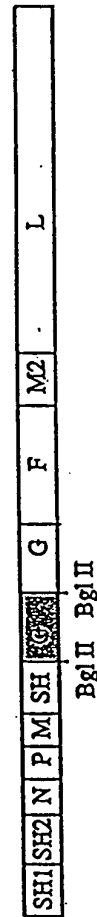
A. RSVB-GF



B. RSVB9320G-F/M2



C. RSVB9320G-SH/G



FIGS. 4A-C

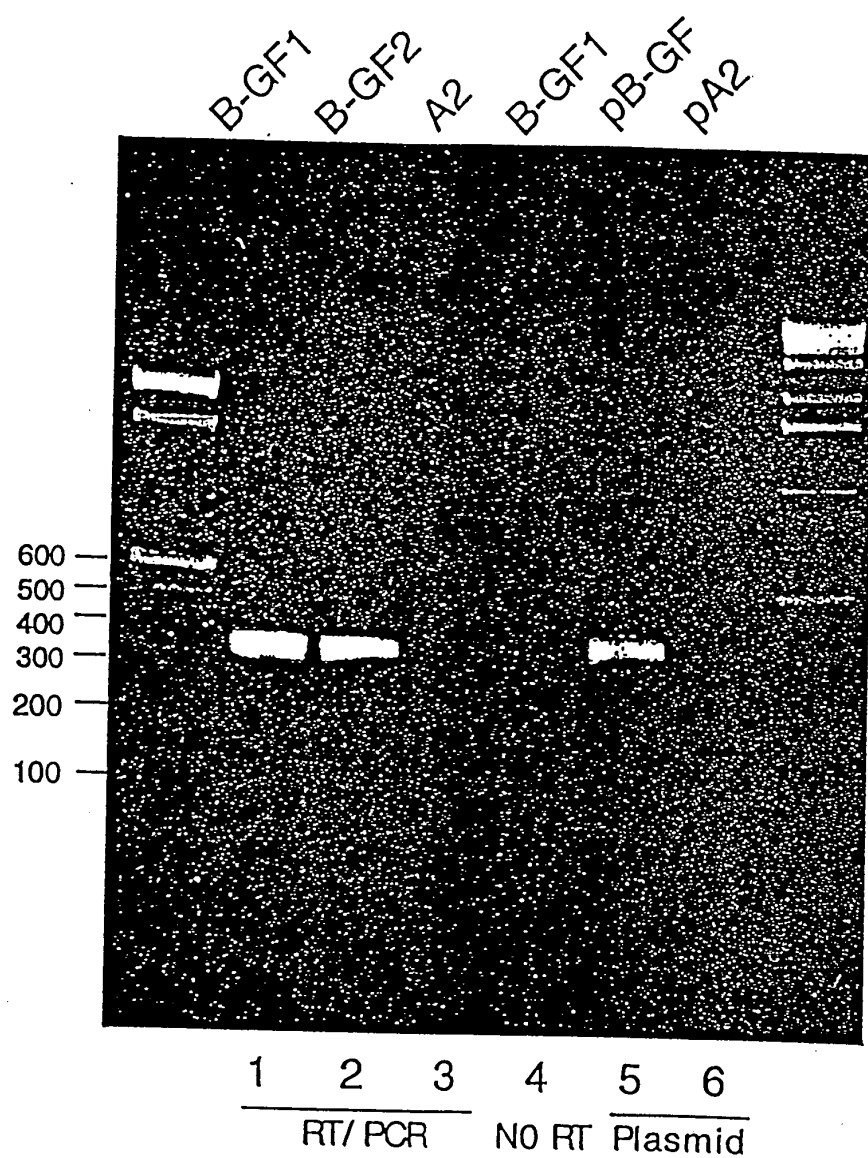
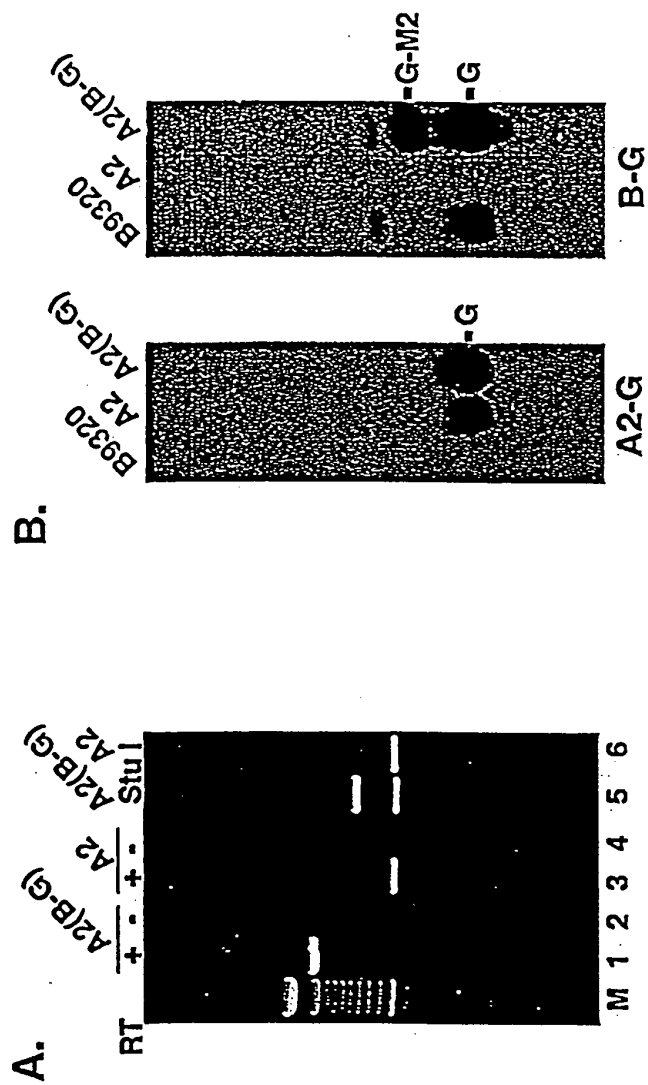


FIG. 5



FIGS. 6A-B

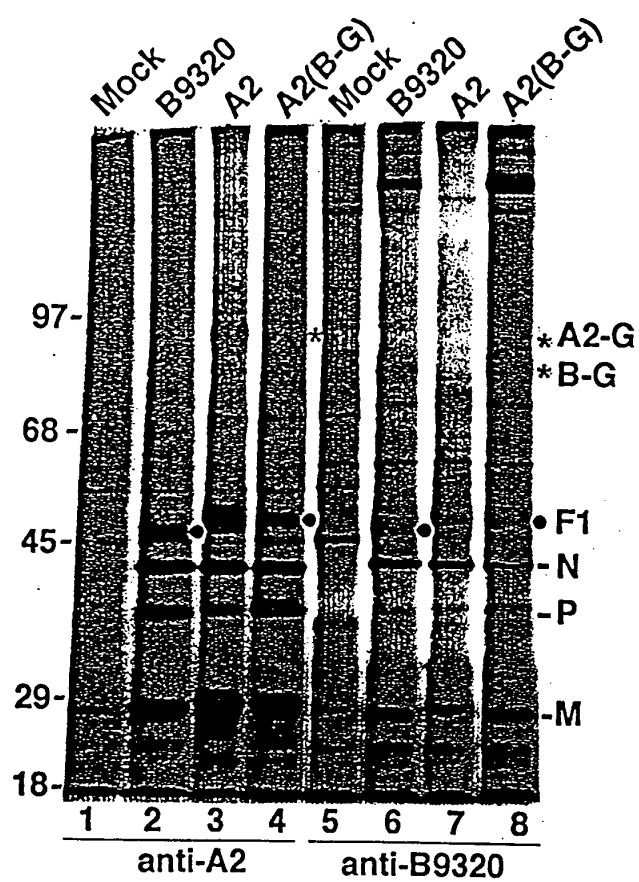


FIG. 7

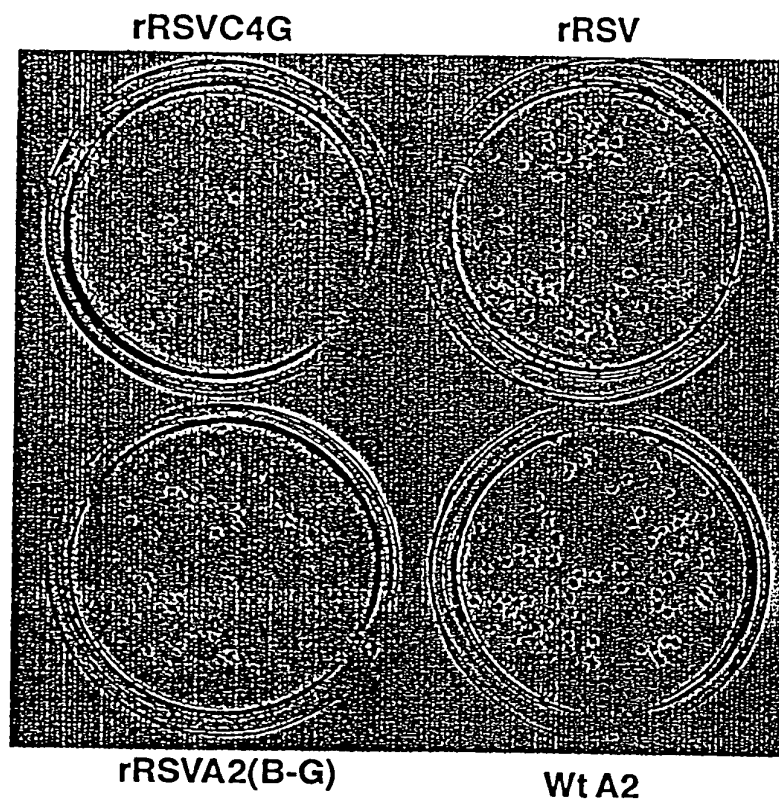


FIG. 8

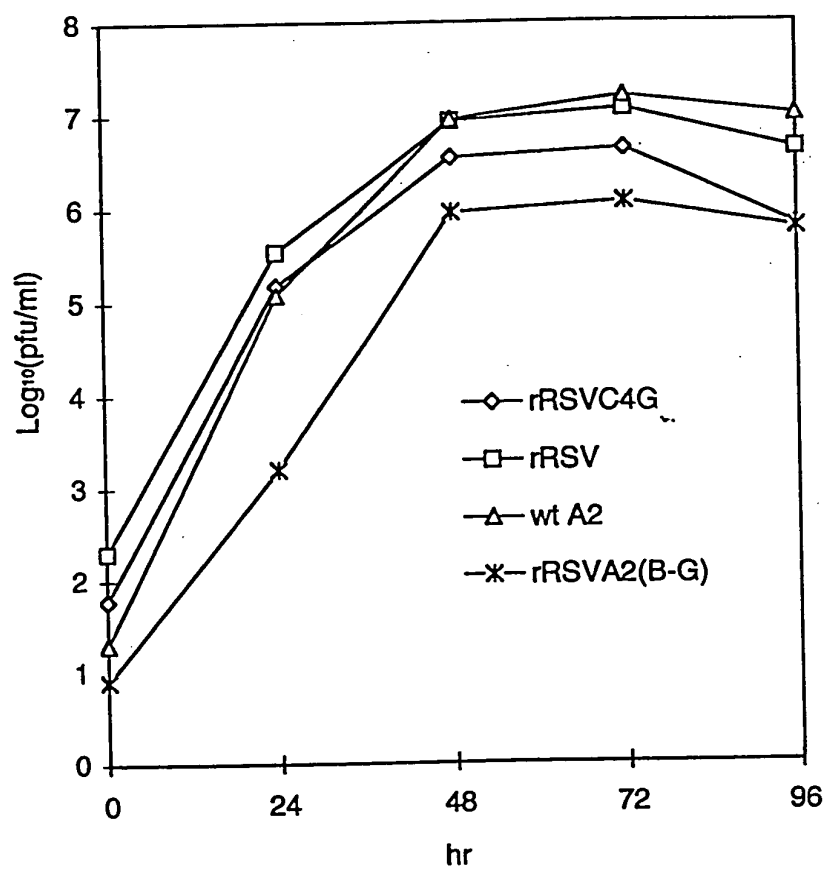


FIG. 9

MDPIINGNSANVYLT DSYLKGVTFSFECNA LGSYIFNGPYLKNBY TNLSRQNPLIHEMN LKKNITQSLISKVH 75
 KGEIKLEEPTYFQSL LMTYKSMTSSEQIAT TNLKKIIRRAIEIS DVKVYAAILNKLGLKE KDKIKSNNGODEDENS 150
 VITTIKDPDILSAVK DNQSHLKADKNHSTK QKDTIKTTLKCLMC SMQHPPSWLIIHWFNL YTKLNNILTQYRSNE 225
 VKNHGFTLIDNQTLIS GFQFILNQYGCIVYH KEKLRITVTYTNQFL TWKDISLSRLNVCLLI TWISNCLNTLNKSLG 300
 LRCGFENNVLTLQFL YGDCILKLFHNEGFI IIEKEVEGFIMSLILN ITEEDQFRRKFYNSM LNNITDAANKAQKNL 375
 LSRVCHTLIDKTVSD NIINGRWIILLKFL KLKLAGDNMLNLS ELYFLFRIFGHMVD EQAMDVAVKINCNET 450
 KFYLLSSLSMLRGAF TYRIIKGFVNNNYRW PTLRNAIVLPLRWLT YYKLNTYPSLLELTFE RDLIVLSGLRFYREF 525
 RLPKKVDLEMIINDK AISPKNLIWTSFPR NYPMSHIQNYIEHEK LKFSSEDKSRRVLEY YLRDNKFNECDLYNC 600
 VVNQSYLNNPNHVVS LTGKERELSVGRMFA MQPGMFRQVQILAEK MIAENILQFFPESLT RYGDLELQKILELKA 675
 GISNKSRYNDNNYN YISKCSIIITDLSKEN QAFRYETSCICSDVL DELHGVQSLFSWLHL TIPHTIICTYRHAP 750
 PYIGDHIVDLNNVDE QSGLYRYHMGGIEGW CQKLWITIEAISLIDL ISLKGKFSITALING DNQSIDISKPIRLME 825
 GQTHAQADYLLALNS LKLLYKEYAGIGHKL KGTETVYISRDMQFMS KTIQHNGVYYPASIK KVLRVGPWINTILDD 900
 FKVSLESIGSLTQEL EYRGESLLCSLIFRN VLYNQIALQLKNHA LCNNKLYLDILKVLK HLKTFNLDNIDTAL 975
 TLYANLPMFLFGGDP NLLYRSFYRRTPDFL TEAIVHSVFILSYT NHDLKDKLQDLSDDR LNKFLTCTITFDKNP 1050
 NAEFVTLMRDPQALG SERQAKITSEINRLA VTEVLSTAPNKIFSK SAQHYTTTEIDLNDI MQNIEPTYPHGLRVV 1125
 YESLPFYKAEKIVNL ISGTSITNILEKTS AIDLTIDDRATEMR KNITLLIRILPLDCN RDKREILSMENLSIT 1200
 ELSKYVREERSWSLSN IVGVTSPSIMYTMDI KYTTSTISSGIIIEK YVNSLTRGERGPTK PWVGSSTQEKKMPV 1275
 YNRQVLTKKQDQID LLAKLDWVYASIDNK DEFMEELSIGTLGLT YEKAKLFPQYLSVN YLHRLTVSSRPCEFP 1350
 ASIPAYRTTNYHFDT SPINRILTEKYGDED IDIVFQNCISFGLSL MSVVEQFTNVCPNRI ILIPKLINEIHLMKPP 1425
 IFTGDVDIHLKQVI QKQMFELPKISLTQ YVELFLSNKTLKSGS HVNSNLIILAHKISDY FHNTRYILSTNLAGHW 1500
 ILIIQLMKDSKGIFE KDWGEGYITDHMTN LKVFENAYKTYLLCF HKGYGKAKLECDMNT SDLLCVLELIDSSYW 1575
 KSMKSVFLEQKVIKY ILSQDASLHRVKGCH SFKLWFLKRLNVAEF TVCPWVWNIDYHPTH MKAILTYIDLVRMGL 1650
 INIDRIHIKNKHFN DEFYTSNLFYINYNE SDNTHLLTKHIRIAN SELENNYNKLYHPTP ETLENILANPIKSND 1725
 KKTLDNYCIGKNVDS IMLPLLNNKKLIKSS AMIRTNYSKQDLYNL FPMVVIDRIIDHSGN TAKSNQLYTTTSHQI 1800
 SLVHNSTSLYCMPLPW HHINRFNFVFSSTGC KISIEYILKDLKIKD PNCFIAGIGAGNLL LRTVVELHPDIRYIY 1875
 RSLKOCNDHSLPIEF LRLYNGHINIDYGEN LTIPATDATNNIHS YLHIKFAEPIISLFC DAELSVTVNWSKIII 1950
 EWSKHVRKCKYCSSLV NKCMLIVKXHAQDDI DFKLDNITILKTYVC LGSKLKGSEVYLVLT IGPANIFPVENVVQN 2025
 AKLILSRKTNFIMEK KADKESIDANIKSLI PFLCYPITKKGINTA LSKLKSWSVSGDILSY SIAGRNEVFSNKLIN 2100
 HKHMNLIKWFNVHLN FRSTELNYNHLMYVE STYPYLSSELNLSITT NELKKLIKITGSLLY NFHNE 2165

Charged Clusters (Amino Acids that are underlined were changed to alanines)
 Mutations in cpts-248/404
 Mutation in cpts530

FIG. 10

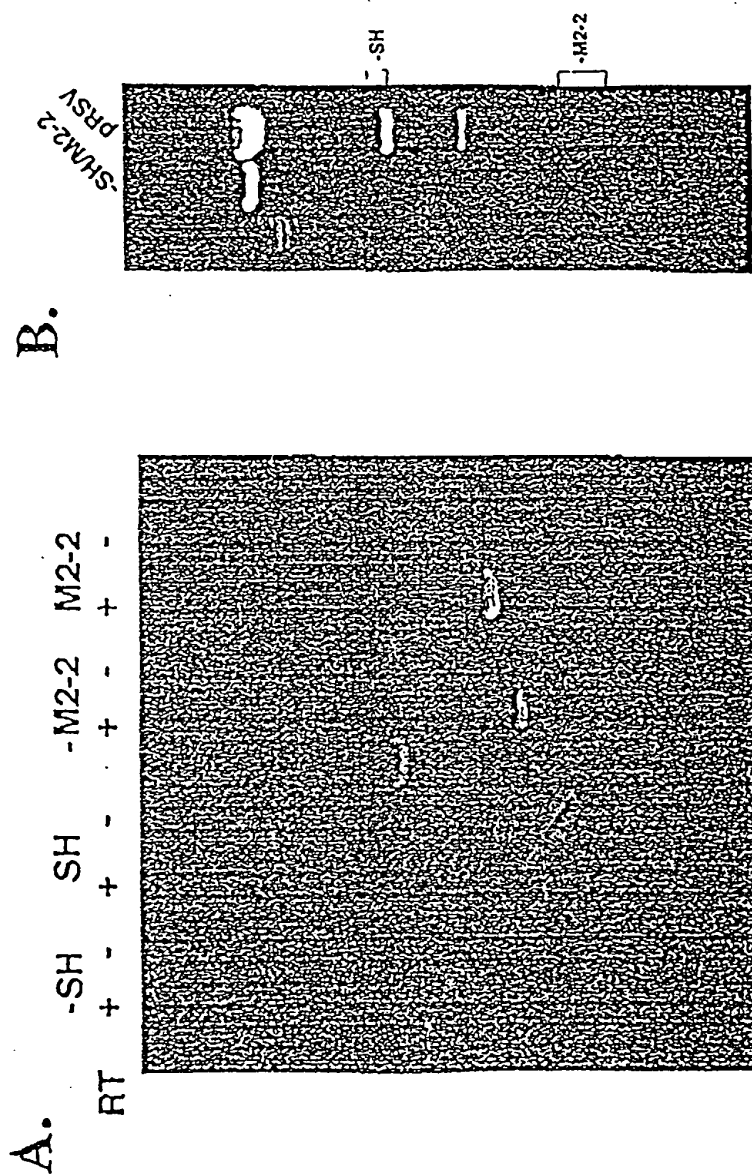
MDPIINGNSANVYLT DSYLKGVISFSECNA LGSYIFNGPYLKNDY TNLISRQNPLIEHNN LKKNITQSLISKYH 175
 KGEIKLEPTYFQSL LMTYKSMTSSEQIAT TNLAKKIIRRAIEIS DVKVYAILNKLGLKE KDKIKSNNGQDEEDNS 150
 VITTIKDDILSAVK DNQSHLKADKNHSTK QKDTIKTILKMLC SMQHPSPWLIIHWFNL YTKLNNILTQYRSNE 225
 VKNEGFTLIDNQTLG GQFQILNQYGCIVYH KELKRITVTYTNQFL TWKDISLSRLNVCLL TWISNCINTLINKSLG 300
 LRCGFNNVILLTQLFL YGDCILKLFHNEGFF IIKEVEGFIMSLILN ITEEDQFRKRFYNM LNNITDAANKAQKNL 375
 LSRVCHTLLDKTVSD NIINGRWIILLSKFL KLKLAGDNNILNLS ELYFLFRIFGHPMVD ERQAMDVKINCNET 450
 KFYLLSSLSMLRGAF IYRIIKGFVNNYNRW PTLRNAIVLPLRWLT YXKLNTPSLLLELLE RDLIVLSGLRFYREF 525
 RLPKKVDLEMIINDK AISPKNLIWTSFPR NYMPSHIQNYIEHEK LKFSSEDKSRVLEY YLRDNKFNECDLYNC 600
 VVNQSVLNNPNHVS LTGKERELSVGRMFA MQPGMFRQVQILAEK MIAENILOFFPESLT RYGDLELQKILELKA 675
 GISNKSRYNDNYYN YISKCSIITDLSKFN QAFRYETSCICSDVL DELHGVQSLFSLWHL TIPHVTIICTYRHAP 750
 PYIGDHIVDLNNVDE QSGLYRYHMGGIEGW CQKLWTTIEAISLIDL ISLKGKFSITALING DNQSIDISKPIRLME 825
 GQTHAQADYLLALNS LKLLYKEYAGIGHKL KGTETYISRDMQFMS KTIQHNQGVYYPASIK KVLRVGPWINTILDD 900
 FKVSLESIGSLTQEL EYRGESLLCSLIFRN VWLYNQIALQLKNHA LCNNKLYLDILKVLK HLKTFEFLDNIDTAL 975
 TLYMNLPLMFGGGDP NLLYRSFYRRTPDFL TEAIVHSVFILSYT NHDLDKQLQDLSDDR LNKFLTCTIITFDKNP 1050
 NAEFVTLMRDPQALG SERQAKITSEINRLA VTEVLSTAPNKIFSK SAQHYTTTEIDLNDI MONEPTYPHGLRVV 1125
 YESLPFYKAEKIVNL ISGTSITNILEKTS AIDLTDIDRATTEMRR KNITLLIRILPLDCN RDKREILSMENLSIT 1200
 ELSKYVRERSWSLSN IVGVTSPSIMYTMDI KYTTSTISSGLIEK YNVNSLTTRGERGPTK PWVGSSTQEKKTMPV 1275
 YNRQVLTKKQRDQID LLAKLDWVYASIDNK DEFMEELSIGTLGLT YEKAKKLFPPQYLSVN YLHRLTVSSSRPQEF 1350
 ASIPAYRTTNYHFDI SPINRILTEKYGED IDIVFQNCISFGLSL MSVVEQFTNVCPNRI ILIPKLINEIHLMKPP 1425
 IFTGVDVHKLKQVI QKQHMFLPKISLTQ YVELELSNKTLSGS HVNSNLI LAHKISDY FHNTYILSTNLAGHW 1500
 ILITIQMKDSKGIFE KDWGEGYITDHMFN LKVFNFAYKTYLLCF HKGYGKAKLECDMNT SDLLCVLELIDSSYW 1575
 KSMKSVFLEQKVIKY ILSQDASLHRVKGQH SFKLWFLKRLNVAEF TVCPWVNVNIDYHPTH MKAILTYIDLVRMGL 1650
 INIDRIHIKNKHFN DEFYTSNLFYINYNF SDNTHLLTKHIRIAN SELENNYNKLYHPTP ETLENILANPIKSN 1725
 KKTINDYCIGKNVDS IMLPLLSNKKLIKSS AMIRTNYSKQDLYNL FPMVVIDRIIDHSGN TAKSNQLYTTTSHQI 1800
 SLVHNSTSLYCMPLPW HHINRFNFVFSSTGC KISIEYILKOLKIKD PNCFIAGFEGAGNLL LRTVVELHHPDIRYIY 1875
 RSLKDCNDHSLPIEF LRLYNGHINIDYGEN LTIPATDATNNIHS YLHIKFAEPISLFCV DAELSVTWNWSKII 1950
 EWSKHVRKCKYCSSLV NKCMLIVKYHAQDDI DFKLDNITILKTYVC LGSKLKGSEVYLVLT IGPANIFPVFNVQN 2025
 AKLILSRKTNFIMPK KADKESIDANIKSLI PFLCYPITKKGINTA LSKLSVSVSGDILSY SIAGRNEVFSNKLIN 2100
 HKHNNILKWFNEHVLN FRSTELNYNHLYMVE STYPYLSELNLSLTT NELKKLKIKITGSLLY NFHNE 2165

C Cysteine residues

C Cysteine residues that were changed to valine or aspartic acid

C Cysteine residue deleted

FIG. 11



FIGS. 12A-B